2008-01-16 Morning Pbar Summary

Tuesday, January 15, 2008
2:11 PM

- Paul's Numbers (http://www-bd.fnal.gov/pplot/index.html):
  - **Most in an hour: 24.15 mA** at Wed Jan 16 02:07:47 CST 2008 (Best: 24.69 mA on 09-Jan-08)
  - **Average Production 18.33 e-6/proton** Best: 23.53 e-6/proton on 11/11/2007
    - Productions were in the 19 to 22 e-6/proton range during the day shift normal iterations of stack and transfer.
    - Overall number brought down somewhat by the little bit larger stack sizes on the owl shift.
  - **Average Protons on Target 6.36 e12** Best: 8.77 e12 on 07/24/2007
    - Running 11 turns over the last 24 hours.
    - Started yesterday running 7.3e12 on target, was up to about 7.5e12 on target after the source output was increased, but dropped back down below 7.1e12 on target for the evening shift, with slightly higher on the evening shift.
    - Evening shift, slip stacking efficiency dropped a bit.
    - We had an AP50 rad monitor trip when there was no beam.
      - Ops changed the chipmunk.
      - Tripped again,but reset.
      - May be the rad card.
  - **Largest Stack 94.70 mA** Best: 271.01 mA on 11/14/2007
- Al's Numbers (http://www-bd.fnal.gov/appix/start?p=60000377&n=55000715):
  - Stacking
    - **Pbars stacked: 397.72 E10**
    - Time stacking: 20.11 Hr
    - Average stacking rate: 19.78 E10/Hr
  - Uptime
    - Number of pulses while in stacking mode: 32016
    - Number of pulses with beam: 27968
    - Fraction of up pulses was: 87.36%
  - The uptime's effect on the stacking numbers
    - Corrected time stacking: 17.57 Hr
    - Possible average stacking rate: 22.64 E10/Hr
  - **Recycler Transfers**
    - **Pbars sent to the Recycler: 402.76 E10**
    - **Number of transfers : 32**
    - **Number of transfer sets: 10**
    - Average Number of transfer per set: 3.20
    - Time taken to shoot: 01.35 Hr
    - Time per set of transfers: 08.08 min
    - **Studies:**
      - Put in optics changes in the AP3 line to improve the match between the Accumulator and Main Injector. Early indications are the emittance growth between Accumulator and Main Injector was not better. We will need to investigate further.
    - Transfer efficiency: 96.00%
    - **Transfer efficiency was around 95%**
      - Brought down slightly by the 84% when transferring from 95mA.
      - Shot 6902 is missing the initial A:IBEAM value in the Recycler shot scrapbook.
  - Other Info
    - Average POT : 7.12 E12
    - Average production: 19.98 pbars/E6 protons

- Performance Notes:

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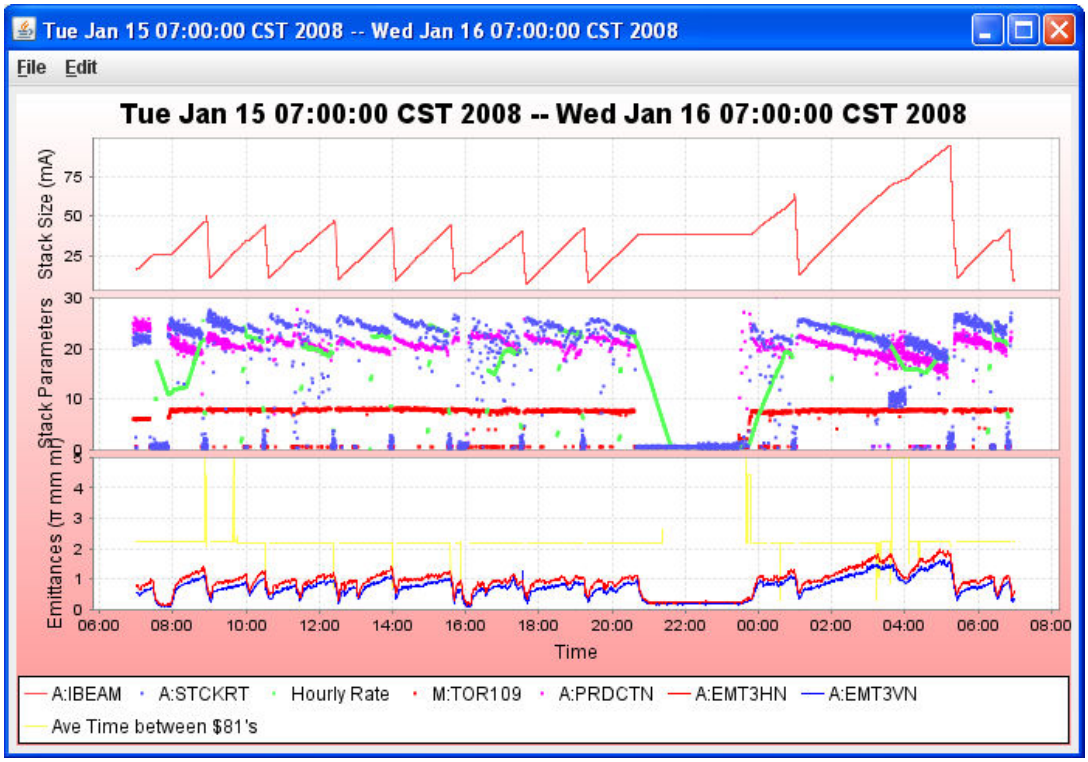
  - 

- Studies
  - Put in optics changes in the AP3 line to improve the match between the Accumulator and Main Injector. Early indications are the emittance growth between Accumulator and Main Injector was unchanged.
- **Studies Request:**
  - We are getting closer to being ready to complete our Debuncher cooling measurements.
  - Sequencer code is being written to streamline the process and minimize the downtime.
  - We could be ready to request as soon as this afternoon, or tomorrow morning is preferable.
- Studies Notes:
  - 2 iterations of Debuncher cooling studies in stacking mode. 1 iteration for momentum and one iterations for transverse. This will be Ralph and Steve, with DVM for Sequencer support. Experts believe the transverse has the largest probability of being compromised. The momentum is probably ok. Following this study would be an access request to make cooling changes in the tunnel. This would possibly be followed by more measurements.
  - ESHUT
    - Don Poll believes that he has fixed the shutter controller for ESHUT.
    - While broken, ISHUT was configured to close during shots. We have left it in this configuration for now. Sequencers, alarms, etc… are configured for this.
  - Static Stacktail measurement - when running well.
  - 1 shot rapid transfers: DVM will work on Sequencer after Debuncher studies are done.